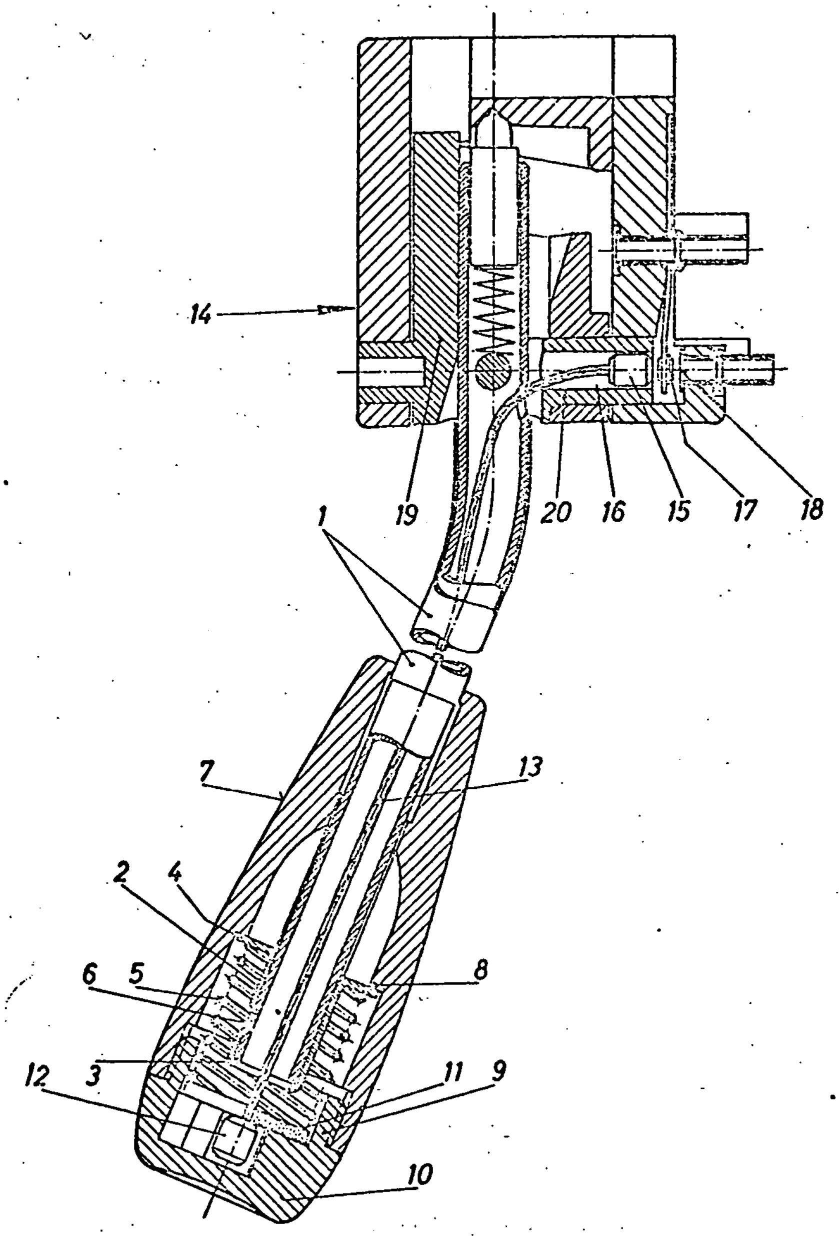
200/4

1178647 COMPLETE SPECIFICATION

1 SHEET

This drawing is a reproduction of the Original on a reduced scale



PATENT SPECIFICATION

DRAWINGS ATTACHED

1,178,647

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International Classification:—H 01 h 3/36

2.1

GREAT BRITAIN
GROUP 219
CLASS 200

COMPLETE SPECIFICATION

Improvements in or relating to Electrical Switches

We, WESTFALISCHE METALL INDUSTRIE KG HUECK & CO., a German Company, of 4780 Lippstadt, Germany, do hereby declare the invention for which we pray that a patent may be granted to us and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to a switch for motor vehicles having a tubular switch arm which is pivotally displaceable for control of such equipment as direction indicators, head-lamps, a windscreen washer and/or other electrical devices and having a switching device, which is conventionally in the form of a press-button, on the free end of the switch arm and which can be displaced axially of the arm for the exercise of a further switching function, for example to switch on an electrical device for a brief period of operation, such an an acoustic and/or optical warning system, a windscreen washer or a stepping relay.

Such switches of known design have the disadvantage that the current conductor for the press-button switch is led through the long, tubular switch arm and is continually subject to bending stress at the point of transition from the switch arm to its mounting when the arm is displaced.

According to the present invention, the switching device on the switch arm has a cable extending from it through the arm, said cable being displaceable along the arm to transit the axial movement of said device to switch means secured relative to said mounting. In this way, it is possible for the contacts of a press-button switch arranged on the free end of the switch arm also to be disposed in the housing of the switch, so that current conductor can be kept short and does not have to be flexed and the bending stress on moving the switch arm is avoided. So that the wire cable is not subject to any great bending stress when the switch arm is pivotally displaced, it is preferred to arrange that its end nearer the switch is guided by means comprising a cylindrical thickened portion located in a bore of the switch coupled to the switch arm, so that the wire cable is also swivelled as a whole when the switch arm is displaced.

According to another preferred feature of the invention, said guide bore is arranged coaxially with the pivot axis of the switch arm. Such an arrangement has the advantage that the associated end of the wire cable has the same position in any pivoted position of the switch arm.

One constructional example of a steering column switch according to the invention is illustrated in the accompanying drawing.

Referring to the drawing, the outer free end of a tubular switch arm 1 of a steering column switch 14 has pushed onto it a sleeve 2 of which a flanged-over end 3 bears on the end of the switch arm while the other end comprises a flange 4, on which is supported a compression spring 5. The sleeve 2 is secured to the switch arm 1 by an indentation 6. A hand grip 7 slidingly mounted on the switch arm has an inner shoulder 8 urged against the flange 4 by means of the spring 5 acting through a cap nut 10 screwed on the end 9 of the hand grip. Arranged between the cap nut 10 and the compression spring 5 is a disc 11, which clamps the end 12 of a wire cable 13 between it and the head of the cap nut.

By applying pressure to the cap nut 10 axially of the switch arm 1, the press-button consisting of the nut 10 and hand grip 7 is displaced against the pressure of the spring 5 supported on the flange 4 and displaces the wire cable 13 towards the steering column switch 14. Provided on that end of the wire cable closest to the switch is a cylindrical thickened portion 15, which is then partially extended from a bore 16 acting as a guideway for it, and thereby forces a resiliently formed, movable contact 17 against a fixed contact 18 to close a switching circuit.

[*Price 5s. 0d.*]

The bore 16 is arranged in a component 19 of the switch 14 that is fixed to the pivotable switch arm 1 and the bore is in fact co-axial with pivot pin 20 defining the pivot axis of the arm.

WHAT WE CLAIM IS:—

1. A switch for a motor vehicle comprising a tubular switch pivotally displaceable on a mounting to perform a switching function, the arm having a switching device on its free end displaceable axially of the arm to perform a further switching function, a cable extending through the arm from said device and displaceable along the arm to transmit the axial movement of said device to switch means secured relative to said mounting.

2. A switch according to Claim 1 wherein said switching device is in the form of a press-button displaceable on said arm against a return spring.

3. A switch according to Claim 1 or Claim 2 wherein at its switch end the cable has a cylindrically enlarged portion in a guide bore formed in an element fixed to the switch arm.

4. A switch according to Claim 3 wherein said guide bore is co-axial with the pivot axis of the switch arm.

5. A switch according to Claim 3 or Claim 4 wherein movement of the switching device towards the arm pivot is arranged to urge said cylindrical portion against a switch spring contact displaceably attached to the switch arm mounting.

6. A switch constructed and arranged for use and operation substantially as described herein with reference to the accompanying drawing.

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